UNITED STATES
SECURITIES AND EXCHANGE COMMISSION
WASHINGTON, D.C. 20549

DIVISION OF
CORPORATION FINANCE

February 21, 2013

Via E-mail
Gerald L. Wisler
President and Chief Executive Officer
Omthera Pharmaceuticals, Inc.
707 State Road
Princeton, New Jersey 08540

Re: Omthera Pharmaceuticals, Inc.
Confidential Draft Registration Statement on Form S-1
Submitted January 25, 2013
CIK No. 0001477598

Dear Mr. Wisler:

We have reviewed your confidential draft registration statement and have the following comments. In some of our comments, we may ask you to provide us with information so we may better understand your disclosure.

Please respond to this letter by providing the requested information and either submitting an amended confidential draft registration statement or publicly filing your registration statement on EDGAR. If you do not believe our comments apply to your facts and circumstances or do not believe an amendment is appropriate, please tell us why in your response.

After reviewing the information you provide in response to these comments and your amended confidential draft registration statement or filed registration statement, we may have additional comments.

General

1. We note that you registration statement is currently incomplete, as certain material disclosure has been omitted and each of your exhibits is to be filed by amendment. In order to expedite our review of your filing, please include this information as soon as possible. We may have additional comments.

2. Please update your financial statements to include the year ended December 31, 2012, as required by Rule 3-12 of Regulation S-X.

Prospectus Summary
Overview, page 1

3. Please state here that Epanova is your sole product candidate and that you have funded your operations to date through private placements of common stock, issuance of convertible preferred stock and short-term loans and government grants.

4. In this summary, please define triglycerides and state the possible adverse health effects of high triglycerides and severe hypertriglyceridemia, similar to your disclosure on pages 59-60.

Selected Risk Factors, page 3

5. Please include in this list a statement conveying that your independent registered public accounting firm has issued a going concern opinion, which could limit your ability to raise additional funds through the issuance of new debt or equity securities.

6. Please include in this list a statement that you have not yet formed a sales or marketing organization to commercialize Epanova and that a failure to do so successfully will hamper your efforts to become profitable.

7. Please state here, and wherever else applicable, your accumulated deficit as of the year ended December 31, 2012. Also, you state here that your accumulated deficit as of September 30, 2012 is $54.7 million. In a risk factor on pages 22-23 and in your Capitalization table on page 38, you cite a figure of approximately $60.4 million. Please review your disclosure to reconcile this discrepancy.

Risk Factors
"We are, and will be completely dependent on third parties to manufacture Epanova, and our commercialization of Epanova could be halted, delayed or made less profitable if those third parties fail to obtain manufacturing approval from the FDA . . .," page 18

8. Please include here and in your discussion on page 62 the material terms of your agreements with Ocean Nutrition Canada Limited and BioVectra Inc., including the duration and termination provisions.

"If we fail to obtain the capital necessary to fund our operations, we may be unable to commercialize Epanova in the United States . . .," page 23

9. Please include in this risk factor the amount of your cash and cash equivalents as of December 31, 2012.

"If we are not successful in attracting and retaining highly qualified personnel, we may not be able to successfully implement our business strategy," page 27

10. Please include in this risk factor the names and titles of the key personnel whose departure might, in your opinion, create a material adverse effect.

"We will incur significant increased costs as a result of operating as a public company, and our management will be required to devote substantial time to compliance initiatives," page 29

11. Please include in this risk factor an estimate of the expenses you will incur in completing this public offering and of your annual compliance costs thereafter.

Use of Proceeds, page 37

12. Please expand the discussion to indicate the approximate amount of the proceeds you currently intend to allocate for marketing approval and commercial launch preparation, respectively, and describe the principal component expenditures within each such allocation.

Management's Discussion and Analysis of Financial Condition and Results of Operations, page 43

13. Please disclose the following information for each of your major research and development projects:

    - The nature, timing and estimated costs of the efforts necessary to complete the project;

    - The risks and uncertainties associated with completing development on schedule;

    - The extent and nature of additional resources that need to be obtained if current liquidity is not expected to be sufficient to complete the project; and

    - If it can be reliably determined, disclose the date of future milestones such as completion of a development phase, date of filing an NDA with a regulatory agency, or approval from a regulatory agency.

Application of Critical Accounting Policies
Accrued Research and Development Expenses, page 46

14. You disclose that you do not expect your estimates to be materially different from the amounts actually incurred. Please revise to disclose how accurate the estimate has been in the past, including any material changes in estimates in the periods presented. Please refer to Section 501.14 of the Financial Reporting Codification added by FR-72.

Stock-Based Compensation, page 47

15. Please expand your disclosure to address the following:

    - Discuss the significant factors, assumptions, and the specific methodologies used to determine enterprise fair value at each date;

    - Disclose how you determined a discount for lack of marketability of 10% was appropriate at each date in valuing your common stock;

    - Describe the factors contributing to significant change in the fair value of the underlying stock during 2012;

    - Once you can reasonably estimate the IPO price, qualitatively and quantitatively discuss each significant factor contributing to the difference between each valuation and the estimated IPO price;

    - Disclose the intrinsic value of the outstanding vested and unvested options based on the estimated IPO price and the options outstanding as of the most recent balance-sheet date presented in the registration statement;

    - Continue to update your disclosure for all equity related transactions through the effectiveness date of the registration statement.

16. Please note that we are deferring the evaluation of stock-based compensation until your estimated offering price is disclosed.

Contractual Obligations and Commitments, page 55

17. Regarding future milestone payments, please disclose the amount and timing of milestone commitments that are reasonably likely to be paid. Please refer to Section 501.13 of the Financial Reporting Codification added by FR-72.

Business
Epanova, page 62

18. In this discussion, please state expressly whether the research you have performed and the discoveries you have made into omega-3 free fatty acids, particularly the combination of EPA and DHA, provides conclusive evidence that Epanova can significantly reduce triglycerides and improve other lipid parameters. If controversy remains in the scientific community as to any of your hypotheses, you should amend your disclosure to note this and to discuss any potential ramifications, particularly how these uncertainties cast doubt upon the possibility of commercializing Epanova. To the extent appropriate, any such controversy should also be addressed in your prospectus summary and in an independent risk factor.

Our Clinical Experience, page 65

19. Here, and in your risk factor on pages 21-22, please name the contract research organization you retained to perform the ECLIPSE, ESPRIT and EVOLVE clinical trials. If you have an agreement, conditional or not, with this CRO to perform any future clinical trials, please disclose this, describe its material terms here and file it as an exhibit to your registration statement. If you believe any such agreement to be not material, please provide us with the basis for this belief.

Shares Eligible for Future Sale
Lock-Up Agreements, page 108

20. Please file a form of the lock-up agreement as an exhibit.

Financial Statements
Notes to the financial Statements
Note 10. Capital Structure – Common Stock, page F-18

21. Please expand your disclosures to describe the terms of unvested common stock, and the impact, if any, the initial public offering will have on the vesting provisions. Clarify if these unvested shares relate to the founders' shares disclosed in Note 12 that include the modified provision of continued service to the Company in order to vest.

Note 11. Capital Structure – Convertible Preferred Stock, page F-18

22. Please disclose the number of Series B Preferred stock shares issued with the conversion of your Bridge Note, and the related accrued interest and warrants.

Note 12. Stock Compensation, page F-20

23. You state that you used a peer group of similar companies to determine expected volatility that include Adloor [sic] Corp. and VIA Pharmaceuticals. Adolor was acquired in 2011 and VIA Pharmaceuticals is no longer a reporting company. Please explain to us why you included these two companies in your peer group to determine expected volatility.

If you intend to respond to these comments with an amended draft registration statement, please submit it and any associated correspondence in accordance with the guidance we provide in the Division's October 11, 2012 announcement on the SEC website at http://www.sec.gov/divisions/corpfin/cfannouncements/drsfilingprocedures101512.htm.

Please keep in mind that we may publicly post filing review correspondence in accordance with our December 1, 2011 policy (http://www.sec.gov/divisions/corpfin/cfannouncements/edgarcorrespondence.htm). If you intend to use Rule 83 (17 CFR 200.83) to request confidential treatment of information in the correspondence you submit on EDGAR, please properly mark that information in each of your

confidential submissions to us so we do not repeat or refer to that information in our comment letters to you.

You may contact Christine Allen at (202) 551-3652 or Donald Abbott at (202) 551-3608 if you have questions regarding comments on the financial statements and related matters. Please contact Scot Foley at (202) 551-3383, John Krug at (202) 551-3862 or me at (202) 551-3715 with any other questions.

Sincerely,

/s/ Jeffrey P. Riedler

Jeffrey P. Riedler
Assistant Director

cc: Edward A. King, Esq.
Kingsley L. Taft, Esq.
Goodwin Procter LLP
Exchange Place
Boston, Massachusetts 02109